

# PATENT COOPERATION TREATY

From the  
INTERNATIONAL SEARCHING AUTHORITY

# PCT

To:

see form PCT/ISA/220

## WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY (PCT Rule 43bis.1)

Date of mailing

(day/month/year) see form PCT/ISA/210 (second sheet)

Applicant's or agent's file reference  
see form PCT/ISA/220

### FOR FURTHER ACTION

See paragraph 2 below

International application No.  
PCT/FI2005/000074

International filing date (day/month/year)  
04.02.2005

Priority date (day/month/year)  
06.02.2004

International Patent Classification (IPC) or both national classification and IPC  
C01G23/053, B01D53/86, C03C17/25, C03C17/00

Applicant  
KEMIRA PIGMENTS OY

### 1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

### 2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will usually be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA"). However, this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of three months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

### 3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA:



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**WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY**

**10/588216**

International application No.  
PCT/FI2005/000074

**AP20 REC'D PCT/PTO 02 AUG 2006**

**Box No. I Basis of the opinion**

1. With regard to the **language**, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.
  - ☐ This opinion has been established on the basis of a translation from the original language into the following language , which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).
2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
  - a. type of material:
    - ☐ a sequence listing
    - ☐ table(s) related to the sequence listing
  - b. format of material:
    - ☐ in written format
    - ☐ in computer readable form
  - c. time of filing/furnishing:
    - ☐ contained in the international application as filed.
    - ☐ filed together with the international application in computer readable form.
    - ☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

**WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY**

International application No.  
PCT/FI2005/000074

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**Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

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**1. Statement**

|                               |             |                         |
|-------------------------------|-------------|-------------------------|
| Novelty (N)                   | Yes: Claims | 2-8, 13-16, 19, 20      |
|                               | No: Claims  | 1, 9-12, 17, 18, 21, 22 |
| Inventive step (IS)           | Yes: Claims |                         |
|                               | No: Claims  | 1-22                    |
| Industrial applicability (IA) | Yes: Claims | 1-22                    |
|                               | No: Claims  |                         |

**2. Citations and explanations**

**see separate sheet**

**WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING  
AUTHORITY (SEPARATE SHEET)**

**AP20 Rec'd PCT/P10 02 AUG 2006**  
International application No  
PCT/FI2005/000074

**Re Item V.**

- 1 Reference is made to the following document:  
D1: Y. LI, Y. FAN, Y. CHEN: "A NOVEL METHOD FOR PREPARATION OF  
NANOCRYSTALLINE RUTILE  $\text{TiO}_2$  POWDERS BY LIQUID HYDROLYSIS OF  
 $\text{TiCl}_4$ " J. MATER. CHEM., vol. 12, 2002, pages 1387-1390, XP002341998  
D2: EP-A-1 095 908
- 2.1. Document D1 discloses a process for preparing  $\text{TiO}_2$ , wherein an aqueous solution  
containing titanium tetrachloride having a concentration 90,4g/l  $\text{TiO}_2$  (1.13mol  $\text{TiCl}_4$ /l)  
was subjected to hydrolysis at 20°C in presence of rutile type seed crystals to  
precipitate hydrated titanium oxide (see D1, Table 1, N°13; page 1387,  
§"Experimental"). The calcination Temperature is from 300-500°C (see D1, page  
1388, Fig.1). The obtained rutile  $\text{TiO}_2$  has a particle size of 10.5 nm and a surface  
area of 70.3 m<sup>2</sup>/g (see D1, table 1 N°13).
- 2.1a. Implicitly document D1 discloses, that the obtained  $\text{TiO}_2$  will have photo catalytic  
properties, as the large surface is important for the catalytic activity (see D1,  
page 1388, right column).
- 2.1b. The subject-matter of claim1,9-12,17,21 is not new in the sense of Article 33(2)  
PCT.
- 2.2. Dependent claims 2-8,13 do not contain any features which, in combination with the  
features of any claim to which they refer, meet the requirements of the PCT in  
respect of inventive step.
3. Document D2 discloses a highly photo catalytic active titanium dioxide (see D2,  
[0037], claims 5-8)
- 3.1. The subject-matter of claims 17, 18, 21 and 22 is not new in the sense of Article  
33(2) PCT.
- 3.2. Dependent claims 19,20 do not contain any features which, in combination with the

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International application No.

PCT/FI2005/000074

features of any claim to which they refer, meet the requirements of the PCT in respect of inventive step.

4. Comparative example 2 refers to EP0444789 A. However, EP0444789 A refers to encoding and decoding of MAC video signals.